



# UNITED STATES PATENT AND TRADEMARK OFFICE

A

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,616	12/26/2001	Olivier Brodeur	71493-1030/pw	4627
27820	7590	09/20/2005	EXAMINER	
WITHROW & TERRANOVA, P.L.L.C. P.O. BOX 1287 CARY, NC 27512			MIRZA, ADNAN M	
			ART UNIT	PAPER NUMBER
			2145	
DATE MAILED: 09/20/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/025,616

**Applicant(s)**

BRODEUR ET AL.

**Examiner**

Adnan M. Mirza

**Art Unit**

2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar et al (U.S. 6,654,811) and Malagrino et al (U.S. 6,714,985).

As per claims 1,8,9 Chaskar disclosed a method of processing fragments of a data packet comprising, for second and subsequent fragments of the data packet, the size of the EOF portion being equal to a size of a terminating portion of a respective preceding fragment (col. 1, lines 51-55).

However Chaskar did not disclose in detail rotating an EOF (end of fragment) portion of a payload of each fragment to before a SOF (start of fragment) portion of the payload of the fragment.

In the same field of endeavor Malagrino disclosed a main controller reassembles the fragments in the proper order by placing the data portion of each fragment in a relative position indicated by

Art Unit: 2145

the IP fragment offset of each fragment and stages the completed packet for forwarding to the data management engine (col. 8, lines 50-55).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporated a main controller reassembles the fragments in the proper order by placing the data portion of each fragment in a relative position indicated by the IP fragment offset of each fragment and stages the completed packet for forwarding to the data management engine as taught by Malagrino in the method of Chaskar to improve the data transfer between the device among different networks.

As per claims Chaskar-Malagrino disclosed 2,11 wherein the size of the EOF portion is a function of a sequence number of the fragment, the fragment size and the size of a smallest addressable memory unit (Chaskar, col. 3, lines 52-60).

As per claims 3,12 Chaskar-Malagrino disclosed wherein the size of the EOF portion rotated expressed in symbols is given by  $\text{Symbol rotation} = (\text{SN} * \text{CS}) \bmod (\text{MUS})$  where SN is a sequence number for the fragment, CS is a size of a fixed-size cell used to carry the fragment, in terms of symbols, and MUS is a size of a single memory location in a memory to which the fragments are to be transferred, also in terms of symbols (Chasker, col. 6, lines 1-13).

As per claims 4,13 Chaskar-Malagrino disclosed further comprising: transmitting the fragments after rotation (Chaskar, col. 3, lines 65-67).

Art Unit: 2145

As per claims 5,14 Chaskar-Malagrino disclosed receiving the fragments prior to rotation (Chaskar, col. 3, lines 48-55).

As per claim 6 Chaskar-Malagrino disclosed further comprising: transferring the first: fragment and each other fragment thus rotated in sequence to an input buffer; after any fragment is transferred to the input buffer, transferring the fragment to a packet buffer with no unaligned memory accesses for the first fragment, and a maximum of one unaligned memory access for each other fragment (Chaskar, col. 4, lines 53-67).

As per claims 7,10,15 Chaskar-Malagrino disclosed wherein after a fragment is transferred to the input buffer, the fragment is stored in the input buffer in a first memory location, a plurality of intermediate memory locations and a last memory location, and wherein transferring each fragment to the packet buffer comprises: for the first fragment, transferring the entire fragment to the packet buffer including a last portion of the fragment in a last written-to memory location in the packet buffer, the last portion being the terminating portion for the first fragment; for second and subsequent fragments: a) in an unaligned memory access (Chasker, col. 4, lines 46-66), combining the portion of the preceding fragment in the last written-to memory location for the preceding fragment in the packet buffer with data from the first memory location and writing it to the last written-to memory location for the preceding fragment; b) writing intermediate memory locations from the input buffer to the packet buffer using aligned memory accesses (Chasker, col. 3, lines 48-64), c) combining contents of the last memory location in the input

Art Unit: 2145

buffer with the EOF portion for the fragment and writing to a last written-to memory location in the packet buffer for the fragment, the combination of the last memory location with the EOF portion for the fragment being the terminating portion for the fragment (Malagrino, col. 4, lines 26-41).

As per claim 16 Chaskar-Malagrino disclosed a method of processing fragments of a data packet comprising, for second and subsequent fragments of the data packet, shifting each fragment by an amount equal to a size of a terminating portion of a respective preceding fragment, the size of the shift being a function of a sequence number of the fragment (Chasker, col. 3, lines 52-60), the fragment size and the size of a smallest addressable memory unit; transferring the first fragment and each other fragment thus shifted in sequences to an input buffer; after any fragment is transferred to the input buffer (Malagrino, col. 4, lines 26-41), transferring the fragment: to a packet buffer with no unaligned memory accesses for the first fragment, and a maximum of one unaligned memory access for each other fragment (Chasker, col. 3, lines 47-64).

As per claim 17 Chaskar-Malagrino disclosed wherein after a fragment is transferred to the input buffer, the fragment is stored in the input buffer in a first memory location, a plurality of intermediate memory locations and a last memory location, and wherein transferring each fragment to the packet buffer comprises: for the first fragment, transferring the entire fragment to the packet buffer including a last portion of the fragment in a last written-to memory location in the packet buffer (Chasker, col. 4, lines 53-66), the last portion being the terminating portion for

Art Unit: 2145

the first fragment; for second and subsequent fragments: a) in a unaligned memory access, combining the portion of the preceding fragment in the last written-to memory location for the preceding fragment in the packet buffer with data from the first memory location and writing it to the last written-to memory location for the preceding fragment (Malagrino, col. 4, lines 26-41); b) writing intermediate memory locations from the input buffer to the packet buffer using aligned memory accesses; c) writing contents of the last memory location in the input buffer to a last written-to memory location in the packet buffer for the fragment (Chasker, col. 4, lines 32-44).

### *Conclusion*

24. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Adnan Mirza whose telephone number is (571)-272-3885.

25. The examiner can normally be reached on Monday to Friday during normal business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dharia Rupal can be reached on (571)-272-3880. The fax for this group is (703)-746-7239.

Art Unit: 2145

26. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703)-746-7239 (For Status Inquiries, Informal or Draft Communications, please label

“PROPOSED” or “DRAFT”);

(703)-746-7239 (For Official Communications Intended for entry, please mark “EXPEDITED PROCEDURE”),

(703)-746-7238 (For After Final Communications).

27. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

Any response to a final action should be mailed to:

BOX AF

Commissioner of Patents and Trademarks Washington, D.C. 20231

Or faxed to:

Hand-delivered responses should be brought to 4<sup>th</sup> Floor Receptionist, Crystal Park II,  
2021 Crystal Drive, Arlington, VA 22202.

*AM*

Adnan Mirza

Examiner

  
RUPAL DHARIA  
SUPERVISORY PATENT EXAMINER